REMARKS

Claims 1, 2, 21, 22, 24, 25, and 26 have been amended. Therefore, claims 1-26 remain pending in this application.

The Examiner rejected claims 1-26 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,701,204 (*Nicholson*) and further in view of U.S. Patent Application No. 2003/0083754 (*Tripathi*). Applicant respectfully traverses this rejection.

As described in the patent application, one or more embodiments of the present invention are directed at efficiently identifying a possible cause of a fault in a manufacturing system including a plurality of processing tools. For example, claim 8 is directed to an equipment interface of a processing tool for efficiently determining a possible cause of a detected fault. The equipment interface of claim 8 includes a storage unit and a control unit communicatively coupled to the storage unit. Claim 8 states that the control unit is adapted to receive an error signal provided by a fault detection unit, wherein the error signal is indicative of an error condition associated with the processing tool of a manufacturing system. The control unit is further adapted to access information related to the error condition from a central database and determine a possible cause of the error condition based on the accessed information.

The Examiner asserts that *Nicholson*, at col. 3, lines 8-11, teaches a control unit adapted to access information related to the error condition from a central database. The Applicant respectfully disagrees. *Nicholson* describes that by visually inspecting the wafer maps, an operator may classify the defects into different types. See col. 3, lines 1-3. The text relied upon by the Examiner (at col. 3, lines 8-11) describes that test data may be <u>sent</u> to a computer

implementing a pattern-recognition software to match the defect patterns of wafers with failure signatures in a predefined failure signature database. Thus, the cited text does not describe a control unit of an equipment interface of a processing tool that is adapted to access information related to the error condition from a central database. Thus, for at least this reason, claim 8 and its dependent claims are allowable.

The Examiner also asserts that *Nicholson*, at col. 3, lines 12-21, teaches a control unit that is adapted to determine a possible cause of the error condition based on the accessed information. The text cited by the Examiner describes performing a diagnosis, based on failure signatures of all the wafers, to identify which tools through which all or most of the defective wafers passed through. The cited text, however, does not teach or disclose that the control unit of the equipment interface of the processing tool is adapted to determine a possible cause of the error condition based on the accessed information. For at least this additional reason, claim 8 and its dependent claims are allowable.

Claims 15-20 are allowable for at least one or more of the reasons claim 8 is allowable.

Claim1 calls for detecting a fault associated with processing of a workpiece in a manufacturing system having a plurality of processing tools; identifying at least one of the processing tools that processes the workpiece; accessing a database that includes a classification of one or more faults; determining at least one of the identified processing tools that may be associated with the detected fault based on the classification of the one or more faults in the database; accessing a database, wherein the database includes information associating one or

more faults with one or more of the identified processing tools; determining at least one of the identified processing tools that may be associated with the detected fault based on at least a portion of the information stored in the database; and providing an error signal to the at least one of the determined processing tools to perform diagnostics based on the detected fault.

None of the applied references, when considered alone or in combination, does not at least teach accessing a database, wherein the database includes information associating one or more faults with one or more of the identified processing tools. The Examiner appears to suggest that the database in *Nicholson* discussed at col. 3, lines 11-12 corresponds to the database of claim 1. The database in *Nicholson*, however, includes pre-defined failure signatures (see col. 3, lines 11-12), and does not include information associating one or more faults with one or more of the identified processing tools. As explained in *Nicholson*, based on the pre-defined failure signatures and the captured failure signatures, additional diagnosis may be performed (col. 3, lines 13-16) to find common tools associated with the defective wafers. Thus, the database in *Nicholson* does not include information associating one or more faults with one or more of the identified processing tools. Because *Nicholson*, does not teach a database that includes information associating one or more faults with one or more identified processing tools, it also does not teach determining at least one of the identified processing tools that may be associated with the detected fault based the information stored in the database based on at least a portion of the information (*i.e.,* which associates one or more faults with one or more of the identified processing tools) stored in the database. For at least these reasons, claim 1 and its dependent claims are allowable. Additionally, claims 21-26 are also allowable for at least one or more reasons claim 1 is allowable.

Reconsideration of the present application is respectfully requested.

In light of the arguments presented above, Applicants respectfully assert that claims 1-26 are allowable. As such, a Notice of Allowance is respectfully solicited.
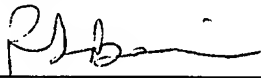
If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Houston, Texas telephone number (713) 934-4064 to discuss the steps necessary for placing the application in condition for allowance.

Respectfully submitted,

Date: June 16, 2004

WILLIAMS, MORGAN & AMERSON, P.C.
CUSTOMER NO. 23720

By: _____
Ruben S. Bains, Reg. No.
10333 Richmond, Suite 1100
Houston, Texas 77042
(713) 934-7000
(713) 934-7011 (facsimile)
ATTORNEY FOR APPLICANT(S)

13